Teichoic Acid

Teichoic Acid - Teichoic acids are also substituted polysaccharides containing ribitol or glycerol residues joined through diphosphoester linkages . These are generally found in the Gram-positive bacteria in association with the peptidoglycan. They constitute a major surface antigen. Teichoic acids are found in the cell walls (wall teichoic acids), in the membranes (membrane teichoic acids) and as the extracellular teichoic acids. Both the membrane and wall teichoic acids are found attached to alanyl residues. Two types of teichoic acids known are glycerol and ribitol teichoic acids

The biosynthesis of glycerol teichoic acid in Bacillus licheniformis involves first the activation of L-α-glycerophosphate by CTP. The activated precursor, CDP glycerol, is then added to the preexisting polymer.

L-α-glycerophosphate + CTP -----> CDP-glycerol+pyrophosphate

CDP-glycerol + (n) glycerophosphate ---------> CMP + glycerophosphate (n+ 1).

The biosynthesis of ribitol phosphate polymer also involves the same pathway with CDP-ribitol as the intermediate.